## DOCUMENT REVISION INFORMATION

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<tr>
<td>0.1</td>
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<tr>
<td>0.2</td>
<td>Formatting revisions.</td>
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<tr>
<td>0.3</td>
<td>Updated with BRF210.</td>
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<tr>
<td>0.4</td>
<td>Updated with VM models.</td>
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<tr>
<td>0.5</td>
<td>Update with latest PX Product Codes for all models.</td>
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<tr>
<td>0.6</td>
<td>Update to Connectivity Diagram examples.</td>
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<td>1.0</td>
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<tr>
<td>1.1</td>
<td>Updated to Cable Section.</td>
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<tr>
<td>1.2</td>
<td>Updated IP ratings for SKP.</td>
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<td>1.3</td>
<td>Updated environmental ratings (storage &amp; operating), Layout design changes.</td>
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</table>
1 OVERVIEW

The Payment Express Secure Card Reader (SCR) solution offers a complete solution for taking ICC Chip/Contactless and PIN payments in an unattended environment.

Payment Express develops and owns the hardware design, intellectual property and processor platform to ensure end to end accountability from card read to bankcard provider.

1.1 TERMS AND ACRONYMS

<table>
<thead>
<tr>
<th>Term</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>PIN</td>
<td>Personal Identification Number. In the context of card transactions this is typically a secret four digit value, entered to approve a transaction</td>
</tr>
<tr>
<td>PCI</td>
<td>Payment Card Industry Standards Security Council (established 2006). Set data security standards for hardware and software in the payments industry</td>
</tr>
<tr>
<td>PTS</td>
<td>PIN Transaction Security. As set of standards applied to a security standards applying to secure devices such as the SCR200E</td>
</tr>
<tr>
<td>SCR</td>
<td>Secure Card Reader (version 200E)</td>
</tr>
<tr>
<td>SKP</td>
<td>Secure Key Pad (version 200E)</td>
</tr>
<tr>
<td>BRF</td>
<td>Bezel Radio Frequency (version 210)</td>
</tr>
<tr>
<td>CRC</td>
<td>Cyclic Redundancy Check</td>
</tr>
<tr>
<td>MCU</td>
<td>Main Control Unit</td>
</tr>
<tr>
<td>RSA</td>
<td>RSA algorithm</td>
</tr>
<tr>
<td>AES</td>
<td>Advanced Encryption Standard</td>
</tr>
<tr>
<td>ICC</td>
<td>Integrated Circuit Card (chip card/smart card)</td>
</tr>
<tr>
<td>Host</td>
<td>The Payment Express Host. Provides e-commerce services on the internet</td>
</tr>
</tbody>
</table>

1.2 HARDWARE MODELS

The SCR solution consists of two main models. The Standard Unattended models and the VM models specifically designed for use with Vending Machines.

Standard Unattended

<table>
<thead>
<tr>
<th>Model</th>
<th>PX Product Code</th>
<th>Brief Description</th>
</tr>
</thead>
</table>
| SCR200E-RM-M4   | AB0060          | • Secure Card Reader  
                  |                                                             | • Model version E  
                  |                                                             | • Rear Mount |
| SCR200E-FM-M4   | AB0086          | • Secure Card Reader  
                  |                                                             | • Model version E  
                  |                                                             | • Front Mount |
| SKP200E-RMT-M4  | AB0062          | • Secure Key Pad  
                  |                                                             | • Model version E  
                  |                                                             | • Rear Mount |
| BRF210-H-C      | AB0083          | • Bezel Radio Frequency Contactless Reader  
                  |                                                             | • Front Mount |
Vending Machine

<table>
<thead>
<tr>
<th>Model</th>
<th>PX Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCR200E-MDB-RM-M4</td>
<td>AB0087</td>
<td>• MDB (Multidrop Bus) Support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Rear Mount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Connectivity: Ethernet only</td>
</tr>
<tr>
<td>SCR200E-MDB-3G-RM-M4</td>
<td>AB0089</td>
<td>• MDB (Multidrop Bus) Support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Rear Mount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Connectivity: Ethernet &amp; 3G</td>
</tr>
<tr>
<td>SCR200E-VM</td>
<td>AB0095</td>
<td>• Secure Card Reader for Vending Machine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Model version E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Connectivity: Ethernet only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Rear Mount</td>
</tr>
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<td></td>
<td></td>
<td>• MDB (Multidrop Bus) Support</td>
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<tr>
<td>SCR200E-VM-3G</td>
<td>AB0051</td>
<td>• Secure Card Reader for Vending Machine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Model version E</td>
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<tr>
<td></td>
<td></td>
<td>• Connectivity: Ethernet &amp; 3G</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Rear Mount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MDB (Multidrop Bus) Support</td>
</tr>
</tbody>
</table>

Please note that these are our standard models. When ordering or querying about a particular product please mention the PX Product Code. Please contact Payment Express if you require a bespoke solution (see appendix 12 for contact details).

1.3 MODULARITY

The SCR solution for unattended payment applications consists of three modules: the SCR (Secure Card Reader), the SKP (Secure Key Pad) that integrates key pad/display and the BRF that handles the contactless reading.

Depending on the requirements, customers can choose various combinations. Common combinations shown below.

<table>
<thead>
<tr>
<th>Secure Card Reader</th>
<th>Secure Key Pad</th>
<th>Contactless Reader</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCR200E-RM-M4</td>
<td></td>
<td></td>
<td>SCR only</td>
</tr>
<tr>
<td>SCR200E-RM-M4</td>
<td>SKP200E-RMT</td>
<td></td>
<td>SCR + SKP</td>
</tr>
<tr>
<td>SCR200E-RM-M4</td>
<td>SKP200E-RMT</td>
<td>BRF210-H-C</td>
<td>SCR + SKP + BRF</td>
</tr>
<tr>
<td>SCR200E-RM-M4</td>
<td>SKP200E-RMT</td>
<td>BRF210-H-C</td>
<td>SCR + BRF</td>
</tr>
</tbody>
</table>

NB: at this stage the SCR200E Secure Card Reader module is always required.
1.4 CONNECTIVITY DIAGRAMS

Standard Unattended Example

Vending Machine VM Example

Vending Machine MDB Example
1.4.1 Integration Example
2 SCR200E-RM-M4 (AB0060)

Hardware Overview
- Rear Mount Design
- Secure crypto MCU designed for POS applications
- Hardware accelerated encryption (Triple DES, RSA and AES) and a CRC engine
- Dedicated tamper grid and removal switch monitor
- Combined magnetic stripe card and ICC card reader interface
- SAM interfaces
- Coin Shutter
- RJ-45 RS-232 serial ports x4

Physical Link Interface
Please refer to the above photo (SCR200E Rear) for reference.
- Connection with the customer equipment is via the RJ45 port labelled “HOST”.
- Connection with the SKP unit is via the RJ45 port labelled “SKP”.
- Connection with the BRF unit is via the RJ45 connector labelled “BRF”.
- Port labelled “AUX” reserved for future use.

Power Requirements
The device accepts DC regulated from +5V to +45V. SELV (Safety Extra Low Voltage)
When idle (no card inserted), power of 100mW is drawn and when active 600mW is drawn (1000mW max).

Operating & Storage Temperature Ratings
Storage: -35 to 80 degrees (Celsius)
Operating: -25 to 75 degrees (Celsius)

Standards & Compliance
- EMV Level 1 & 2
- PCI PTS v3
  - SRED (Secure Reading and Exchange of Data)
  - ICCR (Integrated Circuit Card Reader)
  - MSR (Magnetic Stripe Reader)
- EMV (online and offline)
- PCI PA-DSS
- Payments NZ Certified
- IP34
- APCA / CECS
- TQM

Additional Comments
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
2.1 SCR200E-RM-M4 DIMENSIONS

2.1.1 SCR200E-RM-M4 including Bezel

Please note that the rear mount bezel will be shipped already connected with the SCR.
2.1.2 SCR200E-RM-M4 Bezel
2.2 SCR200E-RM-M4 MACHINE FACE & CUT-OUT DIMENSIONS

Recommended cut out dimensions for customer equipment.

Please note that this plate is not supplied by Payment Express Hardware and is the responsibility of the customer to arrange their selected mounting method. All non-dimensioned lengths are subject to individual customer machine fronts.
### 2.3 SCR200E-RM-M4 INSTALLATION

<table>
<thead>
<tr>
<th>#</th>
<th>PX Product Code</th>
<th>Description</th>
<th>Default QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MC0005</td>
<td>SCR Rear Mount Zinc Bezel Mounting Gasket</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>AB0060</td>
<td>SCR200E-RM-M4 with Rear Mount Bezel &amp; M4 SEC</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>AB0015</td>
<td>M4 SEC with FPC Connector</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>MF0099</td>
<td>Nut M4 Flange OD 12mm</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Machine Mounting Plate (Customer Equipment) - Refer to 2.2.</td>
<td>1</td>
</tr>
</tbody>
</table>

**Installation Steps:**

1. Mount SCR200E-RMT-M4 (2) to Machine Mounting Plate (5). Tighten screws until Mounting Gasket (1) is fully compressed.
   - Ensure M4 SEC (3) is mounted with silicone facing the M4 Flange Nut (4).

2. Connect cabling as appropriate:
   - HOST Port → Host Application (customer application specific).
   - SKP Port → SKP200E Device
   - BRF Port → BRF200E Device

3. The device now needs to be activated before it can be used. Activation is done via a dual control process. Refer to section 10 (Activation) of this document for more information.
3 SCR200E-FM-M4 (AB0086)

Hardware Overview
- Front Mount Design
- Secure crypto MCU designed for POS applications
- Hardware accelerated encryption (Triple DES, RSA and AES) and a CRC engine
- Dedicated tamper grid and removal switch monitor
- Combined magnetic stripe card and ICC card reader interface
- SAM interfaces
- Coin Shutter
- RJ-45 RS-232 serial ports x4

Physical Link Interface
Please refer to the above photo (SCR200E Rear) for reference.
- Connection with the customer equipment is via the RJ45 port labelled “HOST”.
- Connection with the SKP unit is via the RJ45 port labelled “SKP”.
- Connection with the BRF unit is via the RJ45 connector labelled “BRF”.
- Port labelled “AUX” reserved for future use.

Power Requirements
The device accepts DC regulated from +5V to +45V SELV (Safety Extra Low Voltage)
When idle (no card inserted), power of 100mW is drawn and when active 600mW is drawn (1000mW max).

Operating & Storage Temperature Ratings
Storage: -35 to 80 degrees (Celsius)
Operating: -25 to 75 degrees (Celsius)

Standards & Compliance
- EMV Level 1 & 2
- PCI PTS v3
  - SRED (Secure Reading and Exchange of Data)
  - ICCR (Integrated Circuit Card Reader)
  - MSR (Magnetic Stripe Reader)
- EMV (online and offline)
- PCI PA-DSS
- Payments NZ Certified
- IP34
- APCA / CECS
- TQM

Additional Comments
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
3.1 SCR200E-RM-M4 DIMENSIONS

3.1.1 SCR200E-FM-M4 including Bezel
3.1.2 SCR200E-FM-M4 Bezel
3.2 SCR200E-FM-M4 MACHINE FACE & CUT-OUT DIMENSIONS

Recommended cut out dimensions for customer equipment.

Please note that this plate is not supplied by Payment Express Hardware and is the responsibility of the customer to arrange their selected mounting method. All non-dimensioned lengths are subject to individual customer machine fronts.
3.3 SCR200E-RM-M4 INSTALLATION

<table>
<thead>
<tr>
<th>#</th>
<th>PX Product Code</th>
<th>Description</th>
<th>Default QTY</th>
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<tr>
<td>1</td>
<td>MG0039</td>
<td>SCR Front Mount Zinc Bezel Mounting Gasket</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>MC0011</td>
<td>SCR200E Front Mount Cast Front</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>MC0012</td>
<td>SCR200E Front Mount Cast Adaptor</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>AB0086</td>
<td>SCR200E-FM-M4 with Front Mount Bezel &amp; M4 SEC</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>AB0015</td>
<td>M4 SEC with FPC Connector</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>MF0118</td>
<td>M4 x 10mm Button Head 2.5mm Hex Screw</td>
<td>7</td>
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<tr>
<td>7</td>
<td>MF0119</td>
<td>M4 x 16mm Button Head 2.5mm Hex Screw</td>
<td>1</td>
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<tr>
<td>8</td>
<td>MF0025</td>
<td>M4 Washers x 0.8mm Flat OD 9.0MM</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>MF0117</td>
<td>M3.5 x 8mm Pan Head Pozi Screw</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>-</td>
<td>Machine Mounting Plate (Customer Equipment) – Refer to 3.2</td>
<td>1</td>
</tr>
</tbody>
</table>
Installation Steps:

1. Mount SCR200E-FM-M4 Cast Front (2) to Machine Mounting Plate (10). Tighten screws until Mounting Gasket (1) is fully compressed.

2. Mount Cast Adaptor (3) to Cast Front (2), tighten screws.


   a. Mounting screws should be loose enough to allow SCR200E-FM-M4 (4) to move freely.

   b. Ensure M4 SEC Connector (5) is mounted with silicone facing the screw head.
4. Insert an alignment card (or regular credit card) into the unit and push fully home.

5. Allowing SCR200E-FM-M4 (4) to hang under its own weight:
   a. Tighten lower mounting screws, then
   b. Tighten upper mounting screws.

6. Connect cabling as appropriate.
   a. HOST Port → Host Application (customer application specific).
   b. SKP Port → SKP200E Device
   c. BRF Port → BRF210 Device

7. The device now needs to be activated before it can be used. Activation is done via a dual control process. Refer to section 10 (Activation) of this document for more information.
4 SCR200E-MDB (AB0087 / AB0089)

![SCR200E-MDB Front View](image1)

![SCR200E-MDB Rear View](image2)

**Hardware Overview**
- Rear Mount Design
- Secure crypto MCU designed for POS applications
- Dedicated tamper grid and removal switch monitor
- SAM interfaces
- MDB port x1
- 3G Connectivity Supported - Requires model SCR200E-MDB-3G-RM (AB0089)
- Hardware accelerated encryption (Triple DES, RSA and AES) and a CRC engine
- Combined magnetic stripe card and ICC card reader interface
- RJ-45 RS-232 serial ports x5
- Coin Shutter

**Physical Link Interface**
Please refer to the above photo (SCR200E Rear) for reference.
- Connection with the MDB via the port labelled “MDB”.
- Connection with the customer equipment is via the RJ45 port labelled “HOST”.
- Connection with the SKP unit is via the RJ45 port labelled “SKP”.
- Connection with the BRF unit is via the RJ45 connector labelled “EXT1”.
- Ports labelled “EXT2” and “AUX” reserved for future use.

**Power Requirements**
The device accepts DC regulated from +5V to +45V, SELV (Safety Extra Low Voltage)
When idle (no card inserted), power of 100mW is drawn and when active 600mW is drawn (1000mW max).

**Operating & Storage Temperature Ratings**
Storage: -35 to 80 degrees (Celsius)
Operating: -25 to 75 degrees (Celsius)

**Standards & Compliance**
- EMV Level 1 & 2
- PCI PTS v3
  - SRED (Secure Reading and Exchange of Data)
  - ICCR (Integrated Circuit Card Reader)
  - MSR (Magnetic Stripe Reader)
- EMV (online and offline)
- PCI PA-DSS
- Payments NZ Certified
- IP34
- APCA / CECS
- TQM

**Additional Comments**
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.
Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
4.1 SCR200E-MDB 3G CELLULAR CONNECTION

3G cellular connectivity is supported on the model SCR200E-MDB-3G-RM (AB0089).

SMA Jack Male is used to connect an external 3G antenna. Please consult with your Payment Express Sales Representative to discuss antenna and cabling requirements.

NB: WLAN connectivity supported model can be made available if required. Please consult with your Payment Express Sales Representative for more information.

4.2 SCR200E-MDB DIMENSIONS
4.3 SCR200E-MDB MACHINE FACE & CUT-OUT DIMENSIONS

Recommended cut out dimensions for customer equipment.

Please note that this plate is not supplied by Payment Express Hardware and is the responsibility of the customer to arrange their selected mounting method. All non-dimensioned lengths are subject to individual customer machine fronts.
4.4 SCR200E-MDB INSTALLATION

<table>
<thead>
<tr>
<th>#</th>
<th>PX Product Code</th>
<th>Description</th>
<th>Default QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MG0020</td>
<td>SCR Front Mount Zinc Bezel Mounting Gasket</td>
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</tr>
<tr>
<td>2</td>
<td>AB0087 or AB0089</td>
<td>SCR200E-MDB-RM or SCR200E-MDB-3G-RM</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>AB0015</td>
<td>M4 SEC with FPC Connector</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>MF0099</td>
<td>M4 Nut Flange OD 12mm</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>-</td>
<td>Machine Mounting Plate (Customer Equipment) – Refer to 4.3.</td>
<td>1</td>
</tr>
</tbody>
</table>

Installation Steps:
1. Mount SCR200E-MDB-RM or SCR200E-MDB-3G-RM (2) to Machine Mounting Plate (5). Tighten screws until Mounting Gasket (1) is fully compressed.
   - Ensure M4 SEC (3) is mounted with silicone facing the M4 Flange Nut (4).

2. Connect cabling as appropriate.
   - MDB Port → MDB
   - HOST Port → Host Application (customer application specific).
   - SKP Port → SKP200E Device
   - Ext1 Port → BRF200E Device

3. The device now needs to be activated before it can be used. Activation is done via a dual control process. Refer to section 10 (Activation) of this document for more information.
5 SCR200E-VM (AB0095 / AB0051)

Hardware Overview
- Rear Mount Design
- Secure crypto MCU designed for POS applications
- Dedicated tamper grid and removal switch monitor
- SAM interfaces
- Coin Shutter
- 3G Connectivity Supported - Requires model SCR200E-VM-3G (AB0051)
- Hardware accelerated encryption (Triple DES, RSA and AES) and a CRC engine
- Combined magnetic stripe card and ICC card reader interface
- RJ-45 RS-232 serial ports x4

Physical Link Interface
Please refer to the above photo (SCR200E Rear) for reference.
- Connection with the customer equipment is via the RJ45 port labelled “HOST”.
- Connection with the SKP unit is via the RJ45 port labelled “SKP”.
- Connection with the BRF unit is via the RJ45 connector labelled “BRF”.
- Port labelled “AUX” reserved for future use.

Power Requirements
The device accepts DC regulated from +5V to +45V. SELV (Safety Extra Low Voltage)
When idle (no card inserted), power of 100mW is drawn and when active 600mW is drawn (1000mW max).

Operating & Storage Temperature Ratings
Storage: -30 to 80 degrees (Celsius)
Operating: -20 to 70 degrees (Celsius)

Standards & Compliance
- EMV Level 1 & 2
- PCI PTS v3
  o SRED (Secure Reading and Exchange of Data)
  o ICCR (Integrated Circuit Card Reader)
  o MSR (Magnetic Stripe Reader)
- EMV (online and offline)
- PCI PA-DSS
- Payments NZ Certified
- IP34
- APCA / CECS
- TQM

Additional Comments
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.
Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
5.1 SCR200E-VM DIMENSIONS
5.2 SCR200E-VM WLAN/3G CELLULAR CONNECTION

3G cellular connectivity is supported on the model SCR200E-VM-3G (AB0051).

SMA Jack Male is used to connect an external 3G antenna. Please consult with your Payment Express Sales Representative to discuss antenna and cabling requirements.

Please note that WLAN connectivity is not yet implemented. Please consult with your Payment Express Sales Representative to discuss if WLAN connectivity is required.
5.3 SCR200E-VM MACHINE FACE & CUT-OUT DIMENSIONS

Recommended cut out dimensions for customer equipment.

Please note that this plate is not supplied by Payment Express Hardware and is the responsibility of the customer to arrange their selected mounting method. All non-dimensioned lengths are subject to individual customer machine fronts.
### 5.4 SCR200E-VM INSTALLATION

<table>
<thead>
<tr>
<th>#</th>
<th>PX Product Code</th>
<th>Description</th>
<th>Default QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MG0028</td>
<td>SCR Front Mount Zinc Bezel Mounting Gasket</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>AB0095 or AB0051</td>
<td>SCR200E-VM or SCR200E-VM-3G</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>MF0025</td>
<td>M4 Washer x 0.8mm Flat OD 9.0mm</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>MF0077</td>
<td>M4 Nut Nyloc</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>AB0015</td>
<td>M4 SEC with FPC Connector</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>MF0099</td>
<td>M4 Nut Flange OD 12mm</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Machine Mounting Plate (Customer Equipment) – Refer to 5.3.</td>
<td>1</td>
</tr>
</tbody>
</table>
Installation Steps:

1. Mount SCR200E-VM or SCR200E-VM-W or SCR200E-VM-3G or SCR200E-VM-W3G (2) to Machine Mounting Plate (7). Tighten screws until Mounting Gasket (1) is fully compressed.
   - Ensure M4 SEC (5) is mounted with silicone facing the M4 Flange Nut (6).

2. Connect cabling as appropriate.
   - MDB Port → MDB
   - HOST Port → Host Application (customer application specific).
   - SKP Port → SKP200E Device

3. The device now needs to be activated before it can be used. Activation is done via a dual control process. Refer to section 10 (Activation) of this document for more information.
Hardware Overview
- Rear Mount Design
- Secure crypto MCU designed for POS applications
- Hardware accelerated encryption (Triple DES, RSA and AES) and a CRC engine
- Dedicated tamper grid and removal switch monitor
- 1 RJ-45 RS-232 serial port
- Coloured plastic keys
- LCD display

Physical Link Interface
Please refer to the above photo (SKP200E Rear) for reference.
Connection with the SCR unit is via the RJ45 connector located on the back of the unit.

Power Requirements
The device accepts DC regulated from +5V to +45V. SELV (Safety Extra Low Voltage)

Operating & Storage Temperature Ratings
Storage: -30 to 80 degrees (Celsius)
Operating: -20 to 70 degrees (Celsius)

Standards & Compliance
- PCI PTS v3
  - SRED (Secure Reading and Exchange of Data)
  - ICCR (Integrated Circuit Card Reader)
  - MSR (Magnetic Stripe Reader)
- APCA / CECS
- Payments NZ Certified
- IP65
- TQM

Additional Comments
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
6.1 SKP200E-RMT-M4 DIMENSIONS
6.2 SKP200E-RMT-M4 MACHINE FACE, CUT-OUT DIMENSIONS & PRIVACY SHIELD

Privacy Shield to be customer designed and supplied. The privacy shield is required in order to meet PCI Security Requirements. Privacy Shield must be designed in accordance with PCI PTS POI Security Requirements (Appendix A 1.1). Please note that this plate is not supplied by Payment Express Hardware and is the responsibility of the customer to arrange their selected mounting method. All non-dimensioned lengths are subject to individual customer machine fronts.
6.3 **SKP200E-RMT-M4 INSTALLATION**

<table>
<thead>
<tr>
<th>#</th>
<th>PX Product Code</th>
<th>Description</th>
<th>Default QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AB0062</td>
<td>SKP200E-RMT-M4 Rear Mount Secure Keypad, M4 SEC</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>MG0018</td>
<td>SKP Mounting Gasket RMT</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>AB0015</td>
<td>M4 SEC</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>MF0099</td>
<td>M4 Nut Flange OD 12mm</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>-</td>
<td>Machine Mounting Plate (Customer Equipment) – Refer to 4.2.</td>
<td>1</td>
</tr>
</tbody>
</table>

**Installation Steps:**

4. Mount SKP200E-RMT-M4 (1) to Machine Mounting Plate (5). Tighten screws until Mounting Gasket (2) is fully compressed.
   - Ensure M4 SEC (3) is mounted with silicone facing the M4 Flange Nut (4).

5. Connect SKP200E-RMT-M4 (1) to a Secure Card Reader via the single rear port using appropriate cable.
Hardware Overview
- The BRF contactless antenna is an optional receiver that can be plugged into the SCR to support contactless payments (e.g. Visa PayWave, MasterCard PayPass, Amex ExpressPay).
- Supports closed loop proprietary payment cards (e.g. MiFare)
- 32-Bit Cortex M3 120MHz processor
- Display LEDs x4
- Landscape design. Portrait design can be made available upon request. Please contact your Payment Express Sales Representative for more information.

Physical Link Interface
Connection with the SCR unit is via the attached cable located on the back of the BRF unit.

Power Requirements
The device accepts DC regulated from +5V to +45V. SELV (Safety Extra Low Voltage)

Operating & Storage Temperature Ratings
Storage: -35 to 80 degrees (Celsius)
Operating: -25 to 75 degrees (Celsius)

Standards & Compliance
- EMV Level 1 & 2
- Visa PayWave v2.1
- EMC Standards
  - FCC Part 15, Subpart C, Section 15.225
  - AS/NZS 4268: 2012
  - ETSI EN 302 291-2, V1.1.1, 2005
  - EN 301 489-3 V1.4.1
  - AS/NZS CISPR 22: 2009 + Amendment 1: 2009
  - MasterCard PayPass v3.0
  - Amex ExpressPay v3.0
  - TQM
  - Environmental Standards
    - IEC 60529 : 2013 (Ed 2.2) – Degrees of protection provided by enclosures – IP66
    - IEC 60068-2-6 : 2007 (Ed. 7.0) – Sinusoidal Vibration
    - IEC 60068-2-64 : 2008 (Ed. 2.0) – Broadband Random Vibration

Additional Comments
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
7.1 BRF210-H-C DIMENSIONS
7.2 BRF210-H-C MACHINE FACE & CUT-OUT DIMENSIONS

Recommended cut out dimensions for customer equipment.

Please note that this plate is not supplied by Payment Express Hardware and is the responsibility of the customer to arrange their selected mounting method. All non-dimensioned lengths are subject to individual customer machine fronts.
### 7.3 BRF210-H-C INSTALLATION

<table>
<thead>
<tr>
<th>#</th>
<th>PX Product Code</th>
<th>Description</th>
<th>Default QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AB0083</td>
<td>BRF210 Contactless Card Reader - Landscape</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>MG0017</td>
<td>BRF210 Mounting Gasket</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>MF0105</td>
<td>M4 NUT Flange Serrated</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>-</td>
<td>Machine Mounting Plate (Customer Equipment) – Refer to 5.2.</td>
<td>1</td>
</tr>
</tbody>
</table>

**Installation Steps:**

1. Mount BRF210-H-C (1) to Machine Mounting Plate (4). Tighten M4 nuts (3) until Mounting Gasket (2) is fully compressed.
   - Use of a drip loop when routing the cable harness is recommended.

2. Connect BRF210-H-C (1) to a Secure Card Reader via the single cable already connected at the rear.
8 CABLES

8.1 RJ45 COM PORT PIN-OUT (SCR+SKP)

The interconnection between the SCR and the host application can be achieved by using RJ45 port “HOST”. This cable is also used to power the SCR device.

8.1.1 COM port (RJ45 connector pin-out)

<table>
<thead>
<tr>
<th>Pin ID</th>
<th>Signal</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UKIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TX</td>
<td>Output</td>
<td>Transmit out. RS232 level, 115Kbps max</td>
</tr>
<tr>
<td>3</td>
<td>RTS</td>
<td>Output</td>
<td>Request-To-Send. RS232 level</td>
</tr>
<tr>
<td>4</td>
<td>RX</td>
<td>Input</td>
<td>Receive in. RS232 level, 115Kbps max</td>
</tr>
<tr>
<td>5</td>
<td>PWR</td>
<td>Power</td>
<td>5Vdc to 45Vdc. Daisy-chained through connectors so can be input or output</td>
</tr>
<tr>
<td>6</td>
<td>PWR</td>
<td>Power</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>CTS</td>
<td>Input</td>
<td>Clear-To-Send. RS232 level.</td>
</tr>
<tr>
<td>8</td>
<td>GND</td>
<td>-</td>
<td>System Ground</td>
</tr>
<tr>
<td>9</td>
<td>GND</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>UKAT</td>
<td></td>
<td>Wakeup</td>
</tr>
</tbody>
</table>

8.2 SCR TO SKP

The interconnection between the SCR and the SKP is provided by a 10/100/1000 Base-T crossover cable with 2-pairs crossed and 2-pairs uncrossed.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Conn 1: T568A (Normal)</th>
<th>Conn 2: T568B (Cross-Over)</th>
<th>Pins on plug face</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Signal</td>
<td>Pair</td>
<td>Colour</td>
</tr>
<tr>
<td>1</td>
<td>TX</td>
<td>3</td>
<td>Orange</td>
</tr>
<tr>
<td>2</td>
<td>RTS</td>
<td>3</td>
<td>Green</td>
</tr>
<tr>
<td>3</td>
<td>RX</td>
<td>2</td>
<td>Yellow</td>
</tr>
<tr>
<td>4</td>
<td>PWR</td>
<td>1</td>
<td>Blue</td>
</tr>
<tr>
<td>5</td>
<td>PWR</td>
<td>1</td>
<td>Blue</td>
</tr>
<tr>
<td>6</td>
<td>CTS</td>
<td>2</td>
<td>Red</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
<td>4</td>
<td>Silver</td>
</tr>
<tr>
<td>8</td>
<td>GND</td>
<td>4</td>
<td>Silver</td>
</tr>
</tbody>
</table>
9 SECURE ACCEPTANCE

The SCR/SKP/BRF solution comprises of security devices therefore before any units are installed the customer must check the following.

9.1 SERIAL NUMBERS

Each unit (SCR/SKP/BRF) has their own unique serial number. Upon receiving the unit, the customer must check to ensure that the serial number on the box matches the serial number on the unit.

Any discrepancies need to be reported to Payment Express (see appendix 10.1 for contact numbers).

9.2 SIGN OF TAMPERING

Customers need to check each unit for signs of tampering.

This should include:

1. Checking for foreign looking objects on the units.

2. Checking for tooling marks on the units.

3. Check SCR LED.

   The SCR uses its status LED to indicate working status. Under normal conditions, the status LED is turned on when SCR is powered on and is turned off shortly (less than a second) when the hardware initialization and self-check is done. When the status LED flashes continuously, an error condition has occurred. Different error conditions are indicated by the colour and flashing frequency of the status LED. The following are the meaning of status LED:

<table>
<thead>
<tr>
<th>Color</th>
<th>Frequency</th>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>1</td>
<td>Unrecoverable</td>
<td>Internal non-volatile memory corrupted</td>
</tr>
<tr>
<td>Red</td>
<td>2</td>
<td>Unrecoverable</td>
<td>Self integrity check failed</td>
</tr>
<tr>
<td>Red</td>
<td>3</td>
<td>Unrecoverable</td>
<td>Grid tampered, KEK lost</td>
</tr>
<tr>
<td>Red</td>
<td>4</td>
<td>Unrecoverable</td>
<td>End of life (UKP keys exhausted)</td>
</tr>
<tr>
<td>Red+Green</td>
<td>1-5</td>
<td>Recoverable</td>
<td>Fatal runtime error</td>
</tr>
</tbody>
</table>

Any signs of tamper or concerns need to be reported to Payment Express (see appendix 10.1 for contact numbers).
10 ACTIVATION

The SCR200E/SKP200E/BRF210 solution requires activation before the devices can begin processing. Activation is required for initial installations and re-installations. Activation is done via a dual control process.

10.1 AUTHORISED CUSTOMER AGENTS

Prior to the installation process beginning two or more customer agents are authorised by Payment Express for the activation of devices. The customer agents are trusted individuals nominated by the customer.

Once the customer agents are established, Payment Express will issue a unique login (username/password) to each customer agent. These logins are used to access the Payment Express website required for the dual control Activation process.

10.2 ACTIVATION PROCESS

Two authorised customer agents must be available for the Activation process to begin.

1. Log on to Payment Express
   Two of the authorised customer agents start separate sessions to log on to the Payment Express website using their individual logins.

2. Identify Terminal(s)
   Once logged in, the terminals available for installation are displayed.

3. Authorise Terminal(s)
   Both of the customer agents will authorise the terminal(s) for installation via the Payment Express website. This authorisation will require a password.

   When both agents approve a terminal for installation the host terminal information will enter into the “Ready for Installation” state pending communications from the terminal. This “Ready for Installation” state will revert to a “Removed” state if physical installation and communication with the terminal do not occur within 24 hours. The agents will need to start the Activation process again if this occurs.

   For audit purposes, a record will be created in the Payment Express host database for all state changes (including the login used and a timestamp).

   Utilizing the 24 hour window, authorised customer agents can choose to begin the Activation process at the time of physical installation or initiate the Activation process prior to the physical installation if they know the physical installation will be done within the next 24 hours.

4. Physical Installation
   Within the 24 hour window, the installation technician will physically install the SCR200E/SKP200E/BRF210 into their mountings. The devices must be connected to communications and the secure channel established to the SCR200E.

5. Terminal Logon
   The installation technician will trigger a transaction via the vendor’s point of sale which will fail with a removal detection error code (W0). The terminal firmware will automatically force a logon, upon which the terminal state is then updated.

6. Ready State (Activation Process Complete)
   The terminal and key pad are now authorised for processing transactions. The installation technician should run another test transaction (using a valid payment card) to confirm correct operation. This transaction should successfully process.
11 MAINTENANCE

11.1 TRADEOUTS & DEACTIVATION PROCESS
In the event that the SCR/SKP/BRF units need to be swapped out or deactivated, please follow instructions below.

1. Call Payment Express Support to log a ticket (see appendix 10.1 for contact numbers). Please provide the following information.
   - Serial Number of SCR200E or SKP200E or BRF210.
   - Brief description of fault / reason for deactivation.
   - Contact Name.
   - Contact Phone Number.
   - Shipping Address (for replacement if needed).
2. Physically remove the device(s). At next communication with the host the device will be marked as removed.
3. Ship the device(s) back to Payment Express.

11.2 MAINTENANCE CARDS
The card reader slot in the SCR unit should be checked on a regular basis. This is to ensure that nothing is lodged inside the card reader slot that may prevent successful card reads or pose a security threat.

The card reader slot can be checked by using a standard maintenance card or standard credit card to ensure smooth insert & remove operation.

11.3 CLEANING INSTRUCTIONS
The external face of the SKP200E device should be carefully cleaned on a regular basis. This is to ensure that the keyboard and display are free of dirt and solvents which could damage the device or prevent users from using the device as intended.

Payment Express recommend cleaning the device with a damp cloth. Do not use any solvents as this may damage the device surface.
# 12 APPENDIX

## 12.1 CONTACT PAYMENT EXPRESS

**Phone**

<table>
<thead>
<tr>
<th>Region</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>International</td>
<td>+64 9 309 4693</td>
</tr>
<tr>
<td>Australia</td>
<td>1 800 006 254 or +61 2 8268 7700</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>+852 3 678 6766</td>
</tr>
<tr>
<td>New Zealand</td>
<td>0800 PAYMENT (729 6368) or 09 309 4693</td>
</tr>
<tr>
<td>Singapore</td>
<td>+65 3 158 1353</td>
</tr>
<tr>
<td>South Africa</td>
<td>+27 10 500 8784</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>+44 (0) 20 3176 5551</td>
</tr>
<tr>
<td>USA</td>
<td>+1 310 670 7299</td>
</tr>
</tbody>
</table>

**E-mail**

<table>
<thead>
<tr>
<th>Role</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td><a href="mailto:sales@paymentexpress.com">sales@paymentexpress.com</a></td>
</tr>
<tr>
<td>Support</td>
<td><a href="mailto:support@paymentexpress.com">support@paymentexpress.com</a></td>
</tr>
<tr>
<td>Dev Support</td>
<td><a href="mailto:devsupport@paymentexpress.com">devsupport@paymentexpress.com</a></td>
</tr>
</tbody>
</table>